

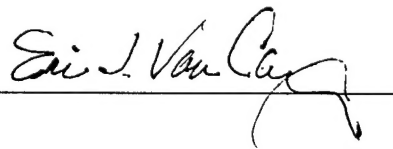
NAVAL WAR COLLEGE
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"Preparing for the Future in 'Revolutionary' Times"

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations. The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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Abstract

If there is any constant of the times in which we live, it is "change." We see it all around us in nearly every facet of our lives. Change on a global geo-political scale -- the restructuring of the strategic landscape -- provides the impetus for us to rethink a future we once collectively viewed with relative certainty. As we view that future with a new eye, one of the few things we can "predict" with a degree of relative surety is that war will be an inherent feature of that world. The difficulty is defining the character of future conflict such that we can prepare the forces and warfighting capabilities of that future.

With such diverse change happening around us, it is inconceivable that narrowly defined solutions (like "precision") are the answer to broader warfighting demands. Balance is the key. Versatile, flexible, responsive, multi-dimensional, and multi-mission capabilities will take on new meaning. We must evolve and refine current capabilities even as we pursue the truly revolutionary capabilities of tomorrow. We do not need to re-package the force we've been building for the last 20 years; we need to build the forces and capabilities of the *next* 20 years and beyond. We must approach future warfare in comprehensive terms -- from history to training and education; from innovative technology to warfighting theory, and the organizational and doctrinal implications of their application for political and military purpose.

Preparing For the Future in "Revolutionary" Times

TODAY WE STAND at the confluence of three historically significant events in our nation's history. The first is the end of the cold war, and with it the demise of the bipolar template that shaped U.S. foreign policy and security strategy; the second is the aftermath of a great military victory in the Persian Gulf; and the third is the technological ascendance of warfare in the information age brought about by advances in the capabilities of microprocessors. Considered in isolation, each provides a host of relevant issues to consider as we frame the context within which we view a future U.S. military. However, taken together, they suggest a deeper assessment of our fundamental approach to warfighting and the forces of the future.

Selected commentaries describe the current and future strategic environment in terms of change.¹ Some suggest that the magnitude of change during this era will resemble "chaos." Still others see revolution.² True or not, our intellectual responses to this strategic entropy tend to follow traditional lines of thought -- strategic lines of thought defined by the relatively static, bi-polar structure of the cold war. They are also derived from a technological perspective of military capability and organizations framed by experience gained during the period since the Vietnam war, and most recently validated in some minds by Desert Storm. Inertia for current thinking about the future also stems from the recurring "roles and missions" debates characteristic of each post-war period since the end of World War II, including the one we live in today.

Individually and institutionally, holding on to the past is a result of the natural need to define order in the midst of instability. It's easiest for individuals and institutions to follow what

they know and do best because past success is the *safest* predictor of future survival in the face of uncertainty. However, to ensure the viability of our military capabilities as the world evolves, the intellectual legacies of thinking about warfighting must evolve to meet the political, economic, and technological realities that are defining U.S. security needs in this "new world order."³ In any warfighting construct we must avoid self-serving attempts to predict the future. Our approach must not rationalize a new strategic environment by painting a picture, but by framing the canvas on which that future is likely to be painted. We must shed a blinding obsession with the Desert Storm theological template that limits how we see the future. We must blend the technological potential of the modern world with an understanding of the constant themes of war's very nature. We must step outside the parochial refrain of the roles and missions debate to truly explore the implications of "warfare in the age of information." We cannot bet our future on narrow perspectives of warfare cast in the self-serving lexicon of "revolution" that is pervasive in a time of change and uncertainty.⁴

This paper will outline the backdrop of change that defines the current post-war period in military terms, and will briefly examine two post-war periods of this century for relevant lessons. It will discuss one feature of current warfighting vision that currently blinds us to our own potential, and finally, will offer a perspective that we must adopt if we are to harness the real possibilities of "revolutionary times."

The Fog of Change and Uncertainty

If there is any constant of the times in which we live, it is "change."⁵ We see it all around us in every facet of our lives. Change on a global geo-political scale -- the restructuring of the

strategic landscape -- provides the impetus for us to rethink a future we once collectively viewed with relative certainty. As we view that future with a new eye, one of the few things we can "predict" with a degree of relative surety is that war will be an inherent feature of that world. The difficulty is defining the character of future conflict such that we can prepare the forces and warfighting capabilities of that future.

In spite of claims to the contrary, no one has yet peered into the future and predicted the next war. While attempts to do so continue, some perspectives suggest that we are entering a period where armed conflict will be supplanted by the relative peace of opposing transnational economic interests.⁶ From an historical perspective, the notion of war as an aberration to peace is a typically American outlook that finds its genesis in the character and limited history of American war experience.⁷ However, one will not find that perspective articulated by anyone involved in the current post-war military debate -- not so much on the grounds of shallow intellectual foundation, but because it runs contrary to the interests of those involved in the debate.

The bi-polar template that defined the international environment during the Cold War was not just a convenient construct for viewing the world in theoretical terms. The practical reality was that it defined the strategic landscape in either political, economic, or military terms not just for the primary antagonists, but for the entire world. The removal of that template has uncorked international instability on a scale we've not seen outside of war at any time during the 20th century. The trends are obvious -- escalating ethnic and religious strife, the disintegration of nation-states, changing economic centers, and the proliferation of information technologies in relatively undeveloped societies and nations.⁸ In the absence of a polar geo-political template, the implications of these trends are that we can expect "chaos" to continue. The deck is being

reshuffled, and while this is happening, we must capitalize on the absence of a peer threat to innovate -- to truly reshape our capabilities for the future.

In order to best understand where we are going, we must have a clear idea where we now stand. Here, an historical perspective is helpful. Two post-war periods of this century provide ample evidence that "we've been here before," and thus must be considered in this examination.

An Historical Perspective

Whether spurred by new geo-political and economic realities, by the emergence of a new threat, or by generational leaps in the technological capability to wage war, each "post-war" period during the 20th century has been marked by change, redirection, and in most cases, reorganization of the existing national military structure. However, the periods following World Wars I and II best illustrate the issues that confront us as we plan future forces and capabilities. Much like the present, the years following both World War I and World War II put the nation at the confluence of three broadly defined events -- the aftermath of a great military victory, strategic realignment on the global stage, and the development of new technologies that would signal a new "revolution in military affairs."⁹ While each period has similarities, each offers unique historical elements that parallel today's environment.

The 1920s and 30s

In the early 1920s, the United States found itself with no peer rival on the world stage, and rapidly dwindling defense budgets.¹⁰ Even so, the post-war period of the 1920s and 1930s fomented exploitation of emerging technologies and the development of operational concepts that moved the U.S. away from WWI experience. These included the development of airpower as an

instrument of war separate from land and sea forces, the capability to launch and recover combat aircraft from ships, the development of amphibious assault doctrine and equipment, and the development of mechanized force capabilities. The fact that these advancements extended through a period of severe economic depression makes them even more impressive. This also makes a strong statement in support of the notion that true innovation and adaptation is viable in the face of austere budgets. However, the technologies (aviation, motorized ground transport, and radio communications, to name a few) that the military services would capitalize on did not come from "revolutions" within -- they largely came from technological revolutions happening in the world around them. The advancement of military uses of technology had to wait for the development of those technologies in the civilian world.¹¹ Thus, if there was a military "revolution," it was found not in the development of the technology itself, but in the conception and adaptation of its use for military purposes.

This is not to say that declarations of revolutionary capabilities within the services were not made nor explored, but rather, that they didn't come to pass in the fashion or timeframe envisioned by prognosticators. One example was in aviation. A revolution in aviation had been declared -- even years before the flight of the Wright Brothers -- when Major J.D. Fullerton of the British Royal Engineers spoke of a "revolution in the art of war." His forecast of a new "revolution" declared that in future warfare, "the chief work will be done in the air, and the arrival of the aerial fleet over the enemies capital will probably conclude the campaign."¹² However, even thirty years later in the early 1920s, the "state of the art" in aviation was insufficient to support the "revolutionary" change that had been envisioned. The fact that this revolution never materialized reflected not just the failure of a single idea, but the eternal siren song of technology in warfare --

the assumption that the future war of which he spoke could somehow provide quick, clean, mechanical, and impersonal solutions to problems that others had struggled with for centuries.¹³ In a larger sense, it demonstrated the need to view the links between technology and objective (strategic, operational, or tactical) through the lens of the verities of warfare. It also reflected the *evolutionary* pathway that must be taken to realize "revolutionary" capabilities.

Each of the services emerged from the inter-war years of the 1920s and 1930s with new capabilities in both concept and technology that were distinctly *different* from what they had possessed during World War I. The aircraft carrier and its combat aircraft were now a reality for the Navy, the Air Corps had the means to execute the strategic bombing campaigns it now envisioned, the Marine Corps had developed the concepts and capabilities of amphibious assault that would prove so important in the Pacific, and the Army would develop mechanized forces of overwhelming strength. However, the world did not stand still for the United States. During this period J.F.C. Fuller and B.H. Liddell Hart established a theoretical framework for air and land teamwork in armored warfare.¹⁴ The Blitzkrieg warfare later employed by the Germans owed much to their ideas.¹⁵ Its employment in France and Russia in 1940 and 1941 stunned the rest of the world, and painted in stark relief another example of the differences between those that "had" and those that "had not" used the inter-war years for technological and doctrinal innovation.

The 1940s and 50s

Theorizing about warfare between 1945 and 1953 took a back seat to the more pressing problems of post-war recovery. Military demobilization under the Truman administration went to the brink of disintegration, and quickly led the government to a policy of deterrence through the threat of nuclear retaliation.¹⁶ Unlike the years following World War one, this post-war period

also featured little technological or doctrinal innovation that moved the U.S. away from its wartime experience. Although the advent of jet aircraft represented a large generational leap in aeronautical technology, operationally, there was little difference between how these aircraft were used and how their propeller-driven predecessors had been used during the second World War. Perhaps the only real innovation of the period was the development of the helicopter and its use for vertical assault. The three primary reasons for this stagnation of innovation were the emergence of a great monolithic Soviet threat, the technological ascendance of nuclear weaponry, and the anemic defense budgets that accompanied post-war downsizing. The first two factors alone became the driving elements of U.S. strategic vision. The third defined the constraints imposed upon the services as they pursued this new capability against the threat, and helped mark the battleground for ensuing interservice fights over roles and missions.

Militarily, the Soviet threat and the new nuclear technology helped perpetuate much of the thinking of the second World War -- total war that largely excluded options for limited objective conflict. In conventional terms, the services envisioned the same military instruments used during the second World War, albeit with some hardware upgrades. However, in other than conventional terms, the nuclear "silver bullet" now took center stage. Nuclear capability not only became a strategic center-of-gravity for the United States, it also became a political trump card for the newly formed United States Air Force in the escalating roles and missions debate that would dominate the post-war defense establishment.

Although the United States recognized that it could not expect to maintain a monopoly on its nuclear capability, it did not expect the Soviet Union to develop a similar weapon before 1952.¹⁷ In September 1949, when President Truman announced that the Soviets had exploded a

nuclear device, this imparted momentum to the development of additional nuclear weapons and the means to deliver them. Then-Chairman of the Joint Chiefs, General Omar Bradley framed this approach in a magazine article one month after the Truman announcement:

"As long as American retains (as it can) a tremendous advantage in A-bomb quantity, quality, and deliverability, the deterrent effect against an aggressor will continue. Sustained research and development can keep us far in the lead ..."¹⁸

The effect of this effort would be to give the Air Force an immediate monopoly on the "deliverability" piece of the strategy. However, they were not only given the lion's share of the responsibility (and budget) for strategic capability, they were also dealt a trump card in the roles and missions debate.

The Air Force had long pursued independence from the Army. After service independence was achieved, and as nuclear capability became the cornerstone of U.S. military might, this fit perfectly with, and validated the belief among airmen that airpower alone would win America's future wars. This gave rise to heady proclamations by airmen on warfare that invariably outran not only the reality of the moment, but were contrary to the constant themes of war's very nature. An example that would portend similar thoughts by Air Force leaders nearly fifty years later in the service white paper *Global Presence*, appeared in an article in the autumn 1948 issue of the *Air University Quarterly Review* written by LtCol. F.R. Pancake:

"We have come to the realization that if we are to have peace in our time it will have to be a Pax Americana...There has been a further awakening to the fact that the instrument of Pax Americana must be Air Power, just as the instrument of Pax Britannica a century ago was sea power...In the event of another war our first and perhaps only major offensive effort will be strategic air attacks."¹⁹

The pursuit of a strategy founded on a single technology was not only out of balance with geo-political realities, but was also at odds with the verities of the nature of war. The liabilities of this approach would soon be demonstrated in Korea, and later repeated in Vietnam. We were not prepared to fight anything less than total war -- an unconstrained war where our (air delivered) nuclear weapons would be decisive. We had stopped thinking about warfare in ways other than what was comfortable and convenient for us. We engaged in narrow defense debate centered on parochial self-interest that detracted from the real necessity to weigh the future as well as the new world around us. In the arrogance of our superiority, we allowed ourselves to be seduced by the eternal siren of technology in warfare -- in this case, airpower and nuclear weapons.

History's Illustration

The historical lessons of these two post-war periods are clear -- in the absence of a peer rival we have a great opportunity to reshape our forces through both technological and doctrinal innovation, even in the face of fiscal austerity. However, as will be discussed, there are obstacles in the pathway ahead -- obstacles of our own making. In the self-congratulatory euphoria of this post-war period we must overcome a tendency to view the future as a logical extension of the most recent past. We must rise above the smoke of parochial self-interest that blinds us to the

real opportunities now before us. We must also overcome the tendency to view new technology in isolation from the theoretical and strategic implications of its employment.

Technology Theology: Kneeling to the God of Precision

Desert Storm was a dream come true for the technology-oriented forces of the U.S. For many it rightly validated the investments in warfighting technology that had been made during the previous two decades. Most of the technology that enabled the seemingly sterile and surgical precision of Desert Storm hinged on the microprocessor. To many this signaled the advent of techno-war, or warfare sanitized of its uncertainty by information technology. The logical extension of techno-war was a "revolution in military affairs" (RMA) that would further capitalize on advances in information technologies -- technologies that promised (albeit in moot fashion) perfect intelligence on the battlefield.²⁰ Thus, the real unspoken lesson was (once again) that in future war, technology could somehow provide quick, clean, mechanical, and impersonal solutions to the issues of conflict -- regardless of context, scale, or intensity. Nowhere is this more evident than in the concept of *precision*.

Precision was supposedly one of the great lessons of Desert Storm, and is one of the "revolutionary" features of future warfighting envisioned in *Joint Vision 2010*.²¹ However, Desert Storm precision was not new, nor is it a revolutionary capability in warfighting. It actually finds its origins in the second World War when the Air Force used it to describe the strategic bombing campaign in Europe -- "daylight, high-altitude, precision bombardment of selected targets..."²² Later events would reveal many shortcomings in the theory, not the least of which was that there was nothing "precise" about aircraft that could not achieve a circular error probable of better than

approximately 1000 meters in spite of the mythical capability of the Norden bombsight.²³ These shortcomings included: (1) the assumption of precise intelligence regarding enemy targets; (2) a tendency to project upon current systems the capabilities of those still on the drawing boards, while minimizing limiting factors; (3) a pattern of looking at the individual parts of the warfare problem in isolation from the whole; and, (4) a tendency to confuse destruction with objective, while at the same time reducing strategy to a targeting problem.²⁴ More recently, one can point to the use of precision air-delivered ordnance in Vietnam, most notably to destroy the Thanh Hoa bridge during Linebacker I operations in 1972.²⁵

Precision's most recent incarnation is found in the RMA. To the capability of precision guided munitions (PGMs) is added the ability to (1) collect precise information, (2) process the information into understanding and communicate that understanding, and (3) prosecute that understanding with rapid, accurate and precise violence (precision force). The result is called precision engagement. One of the features of this new precision is dominant battlefield knowledge (DBK), and is described in a fashion that once again suggests clean, easy, low cost, low risk, bloodless warfare:

"Emerging ISR (information, surveillance, reconnaissance) capabilities will be able to locate and identify virtually everything of military significance in a large geographic area. Processing technologies and particular techniques will lay out the relationships among military units and between those units and the physical environment in which they operate -- in effect identifying the relative importance of the units; the nodes in the opposing military system. This constitutes Dominant Battlefield Knowledge."²⁶

Even this "revolutionary" reincarnation of precision finds its genesis in previous experience -- Israel's "Peace for Galilee" operations in the Bekaa Valley in 1982. Reading this description of precision engagement and dominant battlefield knowledge we also see the same flawed reductionism that was present in the shortcomings of "daylight, high-altitude, precision bombing" outlined above. The fact that neither of the concepts are new or revolutionary suggests that they are merely part of the current lexicon of virtue. To this language of RMA future-speak, add terms like "Perfect Mission Assignment" and "Immediate Comprehensive Battle Assessment," and one might think we have the means to wage perfect, precise, risk free, bloodless warfare.²⁷ Certainly there are those who would have us believe that to be true. However, the solution is more complex, and requires a broader perspective on elements of warfare other than technology.

Technology Worship; A Leap of Faith?

There are no technological advancements that portend the end of warfighting as a human endeavor. The notion that technology will dispel the human dimension of conflict is contrary to the history of warfare and the constant themes of war's very nature. This is not to say that technology does not play a significant role in the warfighting capability that we possess today, or that we look to build for the future. However, the idea of conflict fought by technology-only, suggests a style of warfare based on attrition, whereby the outcome can be expressed as the cumulative sum of destruction against specific target sets. Technology-only solutions in war tend to view the problem in isolation from the other "means" in war, and often these "means" exist for both sides. There may be great efficiency, but little effect in strategic or operational terms because technological solutions often ignore that which cannot be quantified -- the intangibles in the nature of warfare.

It is the human element of war that defines the intangibles -- the vague, the inconsistent, the unpredictable, and the irrational dimensions that we are still, in spite of our technology, at a loss to measure. Yet, in typical fashion we look for absolutes as solutions to uncertainty. We also tend to debate warfighting issues in binary terms -- i.e. "either this...or that." In the technology debate, we have on one side technology advocates whose vision and enthusiasm leads them to see only the possibilities inherent in technological advancement. On the other, we have the high-priests of warfare theory whose zeal for the gospel allows them to see only folly in technology. Both have rational positions -- occasionally there has been too much faith placed in technological solutions to our warfighting problems; in these instances, we have paid dearly for our disregard of the principles of warfare and operational art. However, we have also paid when warfare theory became a mantra of denial -- denial of the profound changes happening around us. The answer is not a choice between one or the other -- the answer is a consideration of both. Therein lies the solution -- balance -- a broader perspective on future warfighting.

Balance in the Revolution

With such diverse change happening around us, it is inconceivable that narrowly defined solutions (like "precision") are the answer to broader warfighting demands. Balance is the key. Versatile, flexible, responsive, multi-dimensional, and multi-mission capabilities will take on new meaning. We must evolve and refine current capabilities even as we pursue the truly revolutionary capabilities of tomorrow. We do not need to re-package the force we've been building for the last 20 years; we need to build the forces and capabilities of the *next* 20 years and beyond.

Though the end of the Cold War has diminished the threat of global conflict, the range of possible conflict or actions to which U.S. forces might be committed has increased dramatically. In terms of warfighting, much of what we would characterize as "change" would fall within the realm of non-traditional military activities. The potential for regional conflict will remain, but today and for the foreseeable future we can expect that non-traditional military activities will be a large part of the events that occupy our attention. Typically referred to as "Military Operations Other Than War (MOOTW)," missions such as disaster relief or humanitarian assistance do not bring to mind the notion of warfighting. However, it is the range of balanced capabilities built around warfighting requirements that allow us to fulfill missions that fall within the realm of MOOTW. We could not make the same case were the opposite true. Additionally, while the term MOOTW allows us to neatly pigeonhole non-traditional military operations for mission statements, the real-world doesn't draw so clean a line between war and "other than war." While historically the majority of U.S. crisis response situations have not resulted in escalation, recent experience in Somalia, Bosnia, and Liberia suggests that we should be prepared for warfighting even when tasked for peacekeeping or other activities that fall under MOOTW.

While MOOTW may be the most probable scenarios for employment of U.S. forces, the nature and dimensions of global instability, and the potential consequences of larger scale war mandate that we also prepare for regional conflict. Here, balance must buy us not just capability, but versatility, flexibility, response, and depth -- all in a smaller numbers of platforms and systems. Force multipliers are no longer a "nice to have" -- they are a necessity in the face of fiscal austerity.

Our efforts to build "revolutionary" capabilities for the day after tomorrow must rise above the lexicon of future-speak that defines much of the defense debate. Revolutionary capabilities are not born in the narrow rhetoric of self-interest that defines the roles and missions dialogue. Nor will truly revolutionary capabilities come solely from technology. Rather, they are born in the minds of individuals committed to innovation -- minds that view warfare in comprehensive terms -- from history to training and education; from innovative technology to warfighting theory, and the organizational and doctrinal implications of their application for political and military purpose.

End Notes

- ¹ Toffler, Alvin and Heidi. Creating a New Civilization: The Politics of the Third Wave (Atlanta: Turner Publishing, Inc., 1994), 8.
- ² Toffler, Alvin and Heidi. War and Anti-War (Boston: Little, Brown and Company, 1993), 31.
- ³ Remark widely attributed to President George Bush in the aftermath of the end of the Cold War. In his book, The New World Strategy (New York: Touchstone, 1995), 59, Col. Harry G. Summers (Ret.) provides his own variation on the theme -- "The New World Disorder..."
- ⁴ Mrozek, Donald J. Air Power and the Ground War in Vietnam: Ideas and Actions (Maxwell AFB: Air University Press), 1988, 123.
- ⁵ Toffler, Alvin and Heidi. Creating a New Civilization: The Politics of the Third Wave, 13.
- ⁶ VanCreveld, Martin. The Transformation of War (New York, The Free Press), 1991, ix.
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- ⁹ Owens, William. "The Emerging Systems of Systems." United States Naval Institute Proceedings, May 1995, 36.
- ¹⁰ Drew, Dennis, and Donald Snow, 171-178.
- ¹¹ Anderson, Gary, and Terry Pierce. "Leaving the Technocratic Tunnel." Joint Force Quarterly, Winter 95-96, 69.
- ¹² MacIsaac, David. "Voices from the Central Blue: The Air Power Theorists." Makers of Modern Strategy from Machiavelli to the Nuclear Age, Peter Paret, ed. (Princeton: Princeton University Press), 1986, 627.
- ¹³ MacIsaac, 626.
- ¹⁴ MacIsaac, 632.
- ¹⁵ MacIsaac, 632.
- ¹⁶ MacIsaac, 641-643.

- ¹⁷ Futrell, Robert. Ideas, Concepts, and Doctrine: Basic Thinking in the United States Air Force, Volume 1 (Maxwell AFB: Air University Press, 1989), 282.
- ¹⁸ Futrell, 282.
- ¹⁹ Futrell, 239.
- ²⁰ Owens, 36.
- ²¹ "Joint Vision 2010: America's Military -- Preparing for Tomorrow." Joint Forces Quarterly, Summer 96, 34-49.
- ²² MacIsaac, 634.
- ²³ Futrell, 81; Warden, John. "Employing Air Power in the Twenty-First Century." The Future of Air Power in the Aftermath of the Gulf War, Shultz, Richard, and Robert Pfaltzgraff, ed. (Maxwell AFB: Air University Press), 1992, 82.
- ²⁴ MacIsaac, 635.
- ²⁵ Tilford, Earl. Setup: What the Air Force Did in Vietnam and Why (Maxwell AFB: Air University Press), 1991, 235.
- ²⁶ From brief prepared for Center for Naval Analysis (CNA) Quadrennial Defense Review working group (unclassified). Summer 1996, 3.
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